

WHAT IS CLAIMED IS:

1. A standard mechanical interface (SMIF) box for storing a reticle, comprising:
 - a base pedestal for holding the reticle; and
 - a box cover fitting with the base pedestal, including an O-ring between the base pedestal and the box cover for hermetically sealing the SMIF box.
2. The SMIF box of claim 1, wherein the box cover further includes a drying agent.
3. The SMIF box of claim 2, wherein the box cover further includes a filter net for retaining the drying agent.
- 10 4. The SMIF box of claim 1, wherein the box cover has a circular groove near edges of the box cover for holding the O-ring.
5. The SMIF box of claim 4, wherein the box cover further includes a drying agent; the circular groove has a approximately rectangular shape; and
- 15 the box cover further has four cavities at four inner corners of the circular groove for holding the drying agent.
6. The SMIF box of claim 5, wherein the box cover further includes a filter net that seals each cavity for retaining the drying agent.
7. A reticle loading system, comprising:
 - 20 an SMIF box for storing a reticle, comprising a base pedestal for holding the reticle and a box cover fitting with the base pedestal; and
 - a hermetic SMIF box loader for separating the base pedestal from the box cover and taking in the base pedestal with the reticle thereon.
8. The reticle loading system of claim 7, wherein the box cover includes an O-

ring between the base pedestal and the box cover for hermetically sealing the SMIF box.

9. The reticle loading system of claim 8, wherein the box cover further includes a drying agent.

10. The reticle loading system of claim 9, wherein the box cover further
5 includes a filter net for retaining the drying agent.

11. The reticle loading system of claim 8, wherein the box cover has a circular groove near edges of the box cover for holding the O-ring.

12. The reticle loading system of claim 11, wherein
the box cover further includes a drying agent;
10 the circular groove has a approximately rectangular shape; and
the box cover further has four cavities at four inner corners of the circular groove for holding the drying agent.

13. The reticle loading system of claim 12, wherein the box cover further includes a filter net that seals each cavity for retaining the drying agent.

15 14. The reticle loading system of claim 7, wherein the hermetic SMIF box loader has an inert gas inlet and an air outlet thereon.

15. The reticle loading system of claim 14, wherein the inert gas inlet comprises a nitrogen gas inlet.

16. An SMIF box loader for loading a reticle from an SMIF box storing the
20 reticle, comprising:

a hermetic body for loading the reticle from the SMIF box; and
an inert gas inlet and an air outlet on the hermetic body.

17. The SMIF box loader of claim 16, wherein the inert gas inlet comprises a nitrogen gas inlet.